

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

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Applicant's or agent's file reference PU020123	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US03/11002	International filing date (day/month/year) 11 April 2003 (11.04.2003)	Priority date (day/month/year) 17 April 2002 (17.04.2002)
International Patent Classification (IPC) or national classification and IPC IPC(7): H03H 7/30 and US Cl.: 375/229		
Applicant THOMSON LICENSING S.A.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

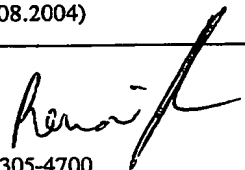
2. This REPORT consists of a total of 2 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 2 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of report with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 17 November 2003 (17.11.2003)	Date of completion of this report 24 August 2004 (24.08.2004)
Name and mailing address of the IPEA/US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703)305-3230	Authorized officer Shuwang Liu  Telephone No. 703 305-4700

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US03/11002

I. Basis of the report

1. With regard to the elements of the international application:*

- ☒ the international application as originally filed.
- ☒ the description:
pages 1-8 as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____.
- ☒ the claims:
pages 9-12, as originally filed
pages NONE, as amended (together with any statement) under Article 19
pages NONE, filed with the demand
pages NONE, filed with the letter of _____.
- ☒ the drawings:
pages 1-2, as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____.
- ☐ the sequence listing part of the description:
pages NONE, as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____.

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages NONE
- ☐ the claims, Nos. NONE
- ☐ the drawings, sheets/fig NONE

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/US03/11002**V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. STATEMENT**

Novelty (N)	Claims <u>4-10, 13-17, 20 and 22</u>	YES
	Claims <u>1-3, 11, 12, 18, 19, 21 and 23</u>	NO
Inventive Step (IS)	Claims <u>4-10, 13-17, 20 and 22</u>	YES
	Claims <u>1-3, 11, 12, 18, 19, 21 and 23</u>	NO
Industrial Applicability (IA)	Claims <u>1-23</u>	YES
	Claims <u>NONE</u>	NO

2. CITATIONS AND EXPLANATIONS

Please See Continuation Sheet

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/US03/11002

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Claims 1-3, 11, 12, 18, 19, 21 and 23 lack novelty under PCT Article 33(2) as being anticipated by Ogawa et al. (US 5,781, 463).

As shown in figure 8, Ogawa et al. discloses

(1) regarding claim 1:

An apparatus for determining convergence of an equalizer, comprising:

an equalizer (1 and 2) output signal;

a nearest element decision device (4A), the nearest element decision device (4A) receiving the equalizer (1 and 2) output signal and creating a decision device (4A) output signal containing permissible symbol values; and

a monitoring circuit (5, 6 and 32), the monitoring circuit receiving the decision device (4A) output signal and applying a test criterion to data contained in the decision device (4A) output signal so as to determine equalizer (1 and 2) convergence.

(2) regarding claim 2:

wherein the equalizer (1 and 2) is formed to include an infinite impulse response filter.

(3) regarding claim 3:

wherein the nearest element decision device (4A) is a slicer.

(4) regarding claim 11:

wherein the monitoring circuit (5, 6 and 32) is a microprocessor.

(5) regarding claim 12:

An equalizer status monitoring device for use in a digital communication system, the device including an adaptive channel equalizer (1 and 2),

a slicer (4A) and

a monitoring circuit (5, 6 and 32), wherein the digital communications system receives a vestigial sideband modulated signal containing high definition video information represented by a multiple level symbol constellation, the data having a data frame format constituted by a succession of data frames, the adaptive channel equalizer (1 and 2) generating a first output signal which is input to the slicer (4A), the slicer (4A) generating a second output signal which is input to the monitoring circuit (5, 6 and 32), the monitoring circuit (5, 6 and 32) applying a test criteria to the second output signal to determine convergence of the adaptive channel equalizer (1 and 2).

(6) regarding claim 18:

wherein the monitoring circuit (5, 6 and 32) is a microprocessor.

(7) regarding claim 19:

In a digital communications receiver including an adaptive equalization filter (1 and 2) that desirably achieves a state of convergence and which undesirably achieves a state of divergence or an invalid state, a method of monitoring the state of the equalization filter (1 and 2) comprising the steps of:

coupling an output signal from the equalization filter (1 and 2) to a monitoring circuit (5, 6 and 32);

causing the monitoring circuit (5, 6 and 32) to examine data contained within the output signal for a finite time period;

causing the monitoring circuit (5, 6 and 32) to apply a test protocol to the examined data; and causing the monitoring

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

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Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

circuit (5, 6 and 32) to reset the equalization filter (1 and 2) when the test protocol detects a state of divergence.

(8) regarding claim 21:

further comprising the steps of:

coupling the equalization filter (1 and 2) output signal to a slicer (4A); and

coupling the slicer (4A) to the monitoring circuit (5, 6 and 32) such that the monitoring circuit (31) examines data generated by the slicer (4A).

(9) regarding claim 23:

wherein the monitoring circuit (5, 6 and 32) is a microprocessor.

Claims 4-10, 13-17, 20 and 22 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest an apparatus having a monitoring circuit which receives the decision device output signal for a predetermined period of time representing an acquisition of a desired number of transmitted symbol values.

Claims 1-23 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

----- NEW CITATIONS -----

NONE